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RAW SEQUENCE LISTING DATE: 10/06/2003
PATENT APPLICATION: **US/09/813,341** TIME: 15:49:26

Input Set : **A:\P1780R1.txt**
Output Set: **N:\CRF4\10062003\I813341.raw**


```
 3 <110> APPLICANT: Miller, Kathy L.
 4       Presta, Leonard G.
 6 <120> TITLE OF INVENTION: MULTIVALENT ANTIBODIES AND USES THEREFOR
 8 <130> FILE REFERENCE: P1780R1
10 <140> CURRENT APPLICATION NUMBER: US 09/813,341
11 <141> CURRENT FILING DATE: 2001-03-20
13 <150> PRIOR APPLICATION NUMBER: US 60/195,819
14 <151> PRIOR FILING DATE: 2000-04-11
16 <160> NUMBER OF SEQ ID NOS: 11
18 <210> SEQ ID NO: 1
19 <211> LENGTH: 218
20 <212> TYPE: PRT
21 <213> ORGANISM: Homo sapiens
23 <400> SEQUENCE: 1
24  Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro
25    1               5                  10                  15
27  Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val
28                  20                  25                  30
30  Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys
31                  35                  40                  45
33  Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
34                  50                  55                  60
36  Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser
37                  65                  70                  75
39  Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
40                  80                  85                  90
42  Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys
43                  95                 100                 105
45  Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr
46                 110                 115                 120
48  Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser
49                 125                 130                 135
51  Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val
52                 140                 145                 150
54  Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
55                 155                 160                 165
57  Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys
58                 170                 175                 180
60  Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser
61                 185                 190                 195
63  Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
64                 200                 205                 210
66  Ser Leu Ser Leu Ser Pro Gly Lys
```

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67                  215
69 <210> SEQ ID NO: 2
70 <211> LENGTH: 218
71 <212> TYPE: PRT
72 <213> ORGANISM: Homo sapien
74 <400> SEQUENCE: 2
75  Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro
76    1               5                  10                  15
78  Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val
79                  20                  25                  30
81  Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys
82                  35                  40                  45
84  Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
85                  50                  55                  60
87  Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser
88                  65                  70                  75
90  Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
91                  80                  85                  90
93  Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys
94                  95                 100                 105
96  Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr
97                 110                 115                 120
99  Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser
100                 125                 130                 135
102  Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val
103                 140                 145                 150
105  Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
106                 155                 160                 165
108  Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys
109                 170                 175                 180
111  Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser
112                 185                 190                 195
114  Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
115                 200                 205                 210
117  Ser Leu Ser Leu Ser Pro Gly Lys
118                 215
120 <210> SEQ ID NO: 3
121 <211> LENGTH: 217
122 <212> TYPE: PRT
123 <213> ORGANISM: Homo sapiens
125 <400> SEQUENCE: 3
126  Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro
127    1               5                  10                  15
129  Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr
130                  20                  25                  30
132  Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Gln Phe
133                  35                  40                  45
135  Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys
136                  50                  55                  60
```

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```
Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val
                  65                  70                  75
Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys
                  80                  85                  90
Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr
                  95                 100                 105
Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr
                 110                 115                 120
Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu
                 125                 130                 135
Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
                 140                 145                 150
Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro
                 155                 160                 165
Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu
                 170                 175                 180
Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys
                 185                 190                 195
Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser
                 200                 205                 210
Leu Ser Leu Ser Pro Gly Lys
                 215
<210> SEQ ID NO: 4
<211> LENGTH: 218
<212> TYPE: PRT
<213> ORGANISM: Homo sapiens
<400> SEQUENCE: 4
Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro
  1               5                  10                  15
Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val
                 20                  25                  30
Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Gln
                 35                  40                  45
Phe Lys Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
                 50                  55                  60
Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser
                 65                  70                  75
Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
                 80                  85                  90
Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys
                 95                 100                 105
Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr
                110                 115                 120
Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser
                125                 130                 135
Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val
                140                 145                 150
Glu Trp Glu Ser Ser Gly Gln Pro Glu Asn Asn Tyr Asn Thr Thr
                155                 160                 165
```

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```
210  Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys
211                  170                 175                 180
213  Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Ile Phe Ser
214                  185                 190                 195
216  Cys Ser Val Met His Glu Ala Leu His Asn Arg Phe Thr Gln Lys
217                  200                 205                 210
219  Ser Leu Ser Leu Ser Pro Gly Lys
220                  215
222 <210> SEQ ID NO: 5
223 <211> LENGTH: 218
224 <212> TYPE: PRT
225 <213> ORGANISM: Homo sapiens
227 <400> SEQUENCE: 5
228  Pro Ala Pro Glu Phe Leu Gly Gly Pro Ser Val Phe Leu Phe Pro
229    1               5                  10                  15
231  Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val
232                   20                  25                  30
234  Thr Cys Val Val Val Asp Val Ser Gln Glu Asp Pro Glu Val Gln
235                   35                  40                  45
237  Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
238                   50                  55                  60
240  Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Tyr Arg Val Val Ser
241                   65                  70                  75
243  Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
244                   80                  85                  90
246  Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ser Ser Ile Glu Lys
247                   95                 100                 105
249  Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr
250                  110                 115                 120
252  Thr Leu Pro Pro Ser Gln Glu Glu Met Thr Lys Asn Gln Val Ser
253                  125                 130                 135
255  Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val
256                  140                 145                 150
258  Glu Trp Glx Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
259                  155                 160                 165
261  Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Arg
262                  170                 175                 180
264  Leu Thr Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val Phe Ser
265                  185                 190                 195
267  Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
268                  200                 205                 210
270  Ser Leu Ser Leu Ser Leu Gly Lys
271                  215
273 <210> SEQ ID NO: 6
274 <211> LENGTH: 215
275 <212> TYPE: PRT
276 <213> ORGANISM: Mus musculus
278 <400> SEQUENCE: 6
279  Thr Val Pro Glu Val Ser Ser Val Phe Ile Phe Pro Pro Lys Pro
```

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Input Set : **A:\P1780R1.txt**
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```
280    1               5                  10                  15
282  Lys Asp Val Leu Thr Ile Thr Leu Thr Pro Lys Val Thr Cys Val
283                   20                  25                  30
285  Val Val Asp Ile Ser Lys Asp Asp Pro Glu Val Gln Phe Ser Trp
286                   35                  40                  45
288  Phe Val Asp Asp Val Glu Val His Thr Ala Gln Thr Gln Pro Arg
289                   50                  55                  60
291  Glu Glu Gln Phe Asn Ser Thr Phe Arg Ser Val Ser Glu Leu Pro
292                   65                  70                  75
294  Ile Met His Gln Asp Cys Leu Asn Gly Lys Glu Phe Lys Cys Arg
295                   80                  85                  90
297  Val Asn Ser Ala Ala Phe Pro Ala Pro Ile Glu Lys Thr Ile Ser
298                   95                 100                 105
300  Lys Thr Lys Gly Arg Pro Lys Ala Pro Gln Val Tyr Thr Ile Pro
301                  110                 115                 120
303  Pro Pro Lys Glu Gln Met Ala Lys Asp Lys Val Ser Leu Thr Cys
304                  125                 130                 135
306  Met Ile Thr Asp Phe Phe Pro Glu Asp Ile Thr Val Glu Trp Gln
307                  140                 145                 150
309  Trp Asn Gly Gln Pro Ala Glu Asn Tyr Lys Asn Thr Gln Pro Ile
310                  155                 160                 165
312  Met Asp Thr Asp Gly Ser Tyr Phe Val Tyr Ser Lys Leu Asn Val
313                  170                 175                 180
315  Gln Lys Ser Asn Trp Glu Ala Gly Asn Thr Phe Thr Cys Ser Val
316                  185                 190                 195
318  Leu His Glu Gly Leu His Asn His His Thr Glu Lys Ser Leu Ser
319                  200                 205                 210
321  His Ser Pro Gly Lys
322                  215
324 <210> SEQ ID NO: 7
325 <211> LENGTH: 218
326 <212> TYPE: PRT
327 <213> ORGANISM: Mus musculus
329 <400> SEQUENCE: 7
330   Pro Ala Pro Asn Leu Leu Gly Gly Pro Ser Val Phe Ile Phe Pro
331     1               5                  10                  15
333   Pro Lys Ile Lys Asp Val Leu Met Ile Ser Leu Ser Pro Ile Val
334                   20                  25                  30
336   Thr Cys Val Val Val Asp Val Ser Glu Asp Asp Pro Asp Val Gln
337                   35                  40                  45
339   Ile Ser Trp Phe Val Asn Asn Val Glu Val His Thr Ala Gln Thr
340                   50                  55                  60
342   Gln Thr His Arg Glu Asp Tyr Asn Ser Thr Leu Arg Val Val Ser
343                   65                  70                  75
345   Ala Leu Pro Ile Gln His Gln Asp Trp Met Ser Gly Lys Glu Phe
346                   80                  85                  90
348   Lys Cys Lys Val Asn Asn Lys Asp Leu Pro Ala Pro Ile Glu Arg
349                   95                 100                 105
351   Thr Ile Ser Lys Pro Lys Gly Ser Val Arg Ala Pro Gln Val Tyr
```

VERIFICATION SUMMARY DATE: 10/06/2003
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